

### In the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

1           1.   (Previously Presented) A method of converting an input  
2 digital audio signal into an output digital audio signal having a  
3 modified time scale comprising the steps of:

4           receiving input digital audio data having a first time scale;  
5           calculating a discrete Fourier transform of first equally  
6 spaced, overlapping time windows having a first overlap amount of  
7 the input digital audio signal;

8           partitioning the spectrum into a plurality of contiguous  
9 spectral bands according to a Bark scale where each spectral band  
10 has an extent dependent upon human frequency perception;

11          identifying a dominant spectral line having the greatest  
12 magnitude within each spectral band;

13          calculating a phase difference for the dominant spectral line  
14 of each spectral band by a phase vocoder algorithm;

15          calculating a phase difference for each of a predetermined  
16 number of spectral lines near the dominant spectral line within  
17 each spectral band as the phase difference of the corresponding  
18 dominant spectral line;

19          calculating a phase difference for other spectral lines of  
20 each spectral band by the phase vocoder algorithm;

21          calculating an inverse discrete Fourier transform resulting in  
22 equally spaced, overlapping time windows having a second overlap  
23 amount employing the calculated phase difference for each spectral  
24 line thereby producing the output digital audio signal, the second  
25 overlap selected having a ratio to the first overlap amount to  
26 achieve a desired time scale modification; and

27          converting the output digital audio signal into sound having a  
28 second time scale according to the desired time scale modification.

2. (Canceled)

1 3. (Original) The method of claim 1, further comprising the  
2 step of:  
3 merging nearby spectral lines that are within a predetermined  
4 frequency range of each other prior to calculating the phase  
5 difference.

4. (Canceled)

1 5. (Previously Presented) The method of claim 1, wherein:  
2 said step of partitioning the spectrum into a plurality of  
3 contiguous spectral bands according to a Bark scale includes  
4 adjusting boundaries of spectral bands to maintain important  
5 frequency groups within the same spectral band.

1 6. (Original) A digital audio apparatus comprising:  
2 a source of a digital audio signal;  
3 a digital signal processor connected to said source of a  
4 digital audio signal programmed to perform time scale modification  
5 on the digital audio signal by  
6 calculate a discrete Fourier transform of first equally  
7 spaced, overlapping time windows having a first overlap  
8 amount,  
9 partition the spectrum into a plurality of contiguous  
10 spectral bands according to a Bark scale where each spectral  
11 band has an extent dependent upon human frequency perception,  
12 identify a dominant spectral line having the greatest  
13 magnitude within each spectral band,  
14 calculate a phase difference for the dominant spectral  
15 line of each spectral band by a phase vocoder algorithm,

16 calculate a phase difference for each of a predetermined  
17 number of spectral lines near the dominant spectral line  
18 within each spectral band as the phase difference of the  
19 corresponding dominant spectral line;

20 calculate a phase difference for other spectral lines of  
21 each spectral band by the phase vocoder algorithm, and

22 calculate an inverse discrete Fourier transform using  
23 equally spaced, overlapping time windows having a second  
24 overlap amount employing the calculated phase difference for  
25 each spectral line thereby forming a time scale modified  
26 digital audio signal, the second overlap selected having a  
27 ratio to the first overlap amount to achieve a desired time  
28 scale modification; and

29 an output device connected to the digital signal processor for  
30 outputting the time scale modified digital audio signal.

7. (Canceled)

1 8. (Original) The digital audio apparatus of claim 6,  
2 wherein:

3 said digital signal processor is further programmed to merge  
4 nearby spectral lines that are within a predetermined frequency  
5 range of each other prior to calculating the phase difference.

9. (Canceled)

1 10. (Currently Amended) The digital audio apparatus of claim  
2 ~~1~~ 6, wherein:

3 said digital signal processor is programmed to partition the  
4 spectrum into a plurality of contiguous spectral bands by adjusting  
5 boundaries of spectral bands to maintain important frequency groups  
6 within the same spectral band.